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Sulphamezathine in the Drinking-Water as a Treatment for Caecal Coccidiosis in Chickens

by

C. HORTON-SMITH AND E. L. TAYLOR

VETERINARY LABORATORY, MINISTRY OF AGRICULTURE

It was previously reported by us (Horton-Smith and Taylor, 1942) that pure sulphamezathine administered in the ration at the rate of 1 to 2 per cent. prevented deaths from caecal coccidiosis in experimentally infected chickens. This was so even when treatment was not commenced until 72 to 96 hours after infection with a lethal dose of sporulated oöcysts. Subsequent observations showed a saturated solution of sulphamezathine to be similarly effective and demonstrated its protective power to be sufficient to prevent the development of disease in chickens that had received as much as one hundred times a known lethal dose of sporulated oocysts. It was also reported (Horton-Smith and Taylor, 1943) that saturated solutions of sulphamezathine, when substituted for ordinary drinking water at the time of the first appearance of symptoms in experimentally infected chickens, reduced the rate of mortality by 45 per cent. in treated as compared with untreated control chickens. Hawkins (1943) has confirmed these results in a test in which saturated sulphamezathine solution was given to chicks 98 hours after infection. His results showed that 88 per cent. of the control chickens died as compared with only 24 per cent. of those treated with sulphamezathine.

The present note gives an account of further observations in which attempts have been made to produce outbreaks of coccidiosis more nearly resembling those which normally occur on poultry farms, the sulphamezathine treatment being introduced only after the first symptoms of coccidiosis had actually appeared. Two pens were used, identical in size and construction, each containing an equal number of susceptible chickens, the groups varying between 40 and 50 in the different experiments. Coccidial infection was then introduced by spraying equal numbers of sporulated oocysts on to the sawdust litter of each pen. As soon as the first deaths from acute caecal coccidiosis occurred a rearrangement of the chickens was brought about, half of the number being changed from one pen to the other in order to correct any differences in distribution or intake of sporulated oocysts that may have taken place. One of the two groups was then given a saturated solution of sulphamezathine in place of drinking water. The results of these trials, three in all, are shown in Table I.

These observations on induced epidemics, simulating as nearly as possible the epidemics that occur naturally on poultry farms, appear to indicate that considerable benefit is to be derived from the application of this treatment to the conrol of coccidiosis in the field.

RESISTANCE TO COCCIDIOSIS FOLLOWING RECOVERY DUE TO SULPHAMEZATHINE TREATMENT

It was next decided to investigate the resistance or susceptibility of survivors following the control of coccidiosis as a result of the application of sulphamezathine treatment. A series of seven experiments comprising 236 chicks was carried out, the chicks used in each experiment being divided into three equal groups, and each experiment being carried out in two stages. Group 1 received massive doses of sporulated oocysts followed by treatment with sulphamethazine in the drinking water from the second day onwards; Group 2 received massive doses of sporulated oocysts only; and Group 3 received sulphamezathine in the drinking water but no sporulated oocysts: this constituted the first part of the experiment. The second part consisted of a comparison between the resistance of the chicks in Groups 1 and 3 to infection with similar massive doses of sporulated oöcysts. Six days after the last deaths among the chicks in Group 1 the sulphamezathine treatment was discontinued for all chicks and the massive dose of oocysts administered one week later to Groups 1 and 3. The results are set out in Table II.

TABLE I

SHOWING THE EFFECT OF SULPHAMEZATHINE TAKEN IN THE DRINKING WATER DURING THE COURSE OF THREE SEPARATE EPIDEMICS OF CAECAL COCCIDIOSIS

No. of Epidemic	Whether the Chicks drank Water or a Solution of Sulphamezathine	Deaths occurring on successive Days following the beginning of the Epidemic											Deaths from Coccidiosis	Percent Mortality
		0	1	2	3	4	5	6	7	8	9	10		
First	Water	2	—	18	14	4	1	—	1	—	—	—	40 (50)*	80
	Sulphamezathine	2	—	6	—	—	—	1	—	—	—	—	9 (50)	18
Second	Water	9	—	—	—	2	3	4	7	1	1	2	29 (40)	69
	Sulphamezathine	6	2	—	—	—	—	—	—	—	—	—	8 (40)	19
Third	Water	2	5	5	—	—	15	1	—	—	—	—	28 (40)	65
	Sulphamezathine	2	2	1	—	—	—	—	—	—	—	—	5 (40)	12

* Figures in parenthesis indicate total number of chicks in the group.

TABLE II

SHOWING A COMPARISON BETWEEN THE RESISTANCE OF CHICKS TREATED WITH SULPHAMEZATHINE, UNTREATED CHICKS, AND RECOVERED CHICKS, TO MASSIVE DOSES OF OOCYSTS OF *E. tenella*

	Groups of Chicks		No. of Experiment							Total Survivors	Total Deaths	Percentage Mortality
			1	2	3	4	5	6	7			
1st Part of Experiment	Group 1 (*a*) treated with sulphamezathine	No. of Chicks	18	8	8	18	5	12	12	60	21	26
		No. of Deaths	1	3	2	7	0	3	5			
	Group 2 untreated controls to first part of experiment	No. of Chicks	18	12	8	13	6	12	11	4	76	95
		No. of Deaths	17	12	8	12	6	12	9			
2nd Part of Experiment	Group 1 (*b*) survivors from Group 1 (*a*) above	No. of Chicks	17	5	6	11	5	9	7	60	0	0
		No. of Deaths	0	0	0	0	0	0	0			
	Group 3 controls* to second part of experiment	No. of Chicks	15	8	5	17	6	12	12	14	61	81
		No. of Deaths	7	8	5	13	6	12	10			

* These controls had previously received the same sulphamezathine treatment as Group 1 (*a*) but had not been exposed to infection with coccidia.

The results of these experiments indicate that a high degree of immunity exists in heavily infected chicks that have received treatment with sulphamezathine. No deaths occurred among the few survivors in Group 2 as a result of reinfection; and additional observations to be reported later have shown that the immunity develops in treated chicks only when the intake of infective oocysts is as great or greater than that which produces immunity in untreated chicks.

A comparative study of sections of the caecal wall of treated and untreated cases of coccidiosis at similar intervals after infection revealed the presence of numerous second generation schizonts, but whereas this stage was observed in the untreated chicks to exhibit normal division into merozoites, the schizonts occurring in the treated chicks were found to exhibit little or no merozoite-formation and, in many instances, appeared to have been killed, as evinced by disintegration, or abortive nuclear division. A detailed study is now being made of the effects of sulphamethazine on the parasite itself.

Summary

The administration of sulphamezathine in the drinking water was found to be effective in the control of induced epidemics of caecal coccidiosis. In three experiments the rate of mortality among treated chicks was reduced by 50 to 73 per cent. of that among untreated controls. Further experiments demonstrated the development of a strong immunity to coccidiosis in chicks which had survived a previous epidemic as a result of sulphamezathine treatment.

References

Hawkins, P. A. (1943.) Sulphamethazine Treatment of Caecal Coccidiosis. *Poultry Science*. **12**. 459.

Horton-Smith, C., and Taylor, E. L. (1942.) Sulphamethazine and Sulphadiazine Treatment in Caecal Coccidiosis of Chickens. *Vet. Rec.* **54**. 516.

——, ——. (1943.) Saturated Solution of Sulphamethazine as a Substitute for Drinking Water in the Treatment of Caecal Coccidiosis in Chickens. *Ibid.* **55**. 109.

CRYSTAL VIOLET VACCINE AGAINST SWINE FEVER

In relation to the note on this subject published in our last issue, we reproduce the following announcement since made by the Ministry of Agriculture :—

"Recently some further reference has been made in the agricultural Press to the possibilities of a crystal violet vaccine for the immunisation of pigs against swine fever. Experiments with this vaccine were reported upon in the autumn of 1944. The general conclusion to be drawn from the report was that if this vaccine could be used under suitable conditions it should prove a valuable method for controlling the disease and reducing the losses caused by swine fever.

"The principal practical difficulties to be overcome before this vaccine can be put into general use are those of supply and price. So far, crystal violet vaccine has to be imported from America and it is in very short supply. Moreover, the cost of the vaccine and of treatment would at present make its use an uneconomic proposition for most pig producers.

"The possibilities of producing this vaccine in suitable quantities in this country are under examination by the Ministry of Agriculture ; but even if it is found practicable to arrange for production, and at a suitable price, some considerable time will inevitably elapse before supplies can be made generally available.

"The results of the experiments already conducted in this country can hardly be of more than academic interest to pig producers generally unless and until supplies of the vaccine become more readily available, and in these circumstances the Ministry has refrained from giving the matter wide publicity. If, however, it is found possible to arrange for larger supplies, a further announcement on the subject will be made at a suitable time."

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ACADEMY OF MEDICINE

The British Medical Journal gives its support to the proposal for the housing of the three royal medical colleges in London on one site, which, as intimated in our last issue, has been ventilated in the correspondence columns of *The Times*. Recapitulating the points of view expressed by the Royal College of Surgeons and by Lord Dawson, the *Journal* goes on to suggest that the Royal College of Obstetricians and Gynaecologists would welcome removal from its house in Queen Anne Street to the large site available on the south side of Lincoln's Inn Fields. "There would seem to be much to gain," it is stated, "and little to lose if consultants and specialists were topographically conjoined in Lincoln's Inn Fields." The *Journal* also urges that the matter is of great interest and importance to medicine, and that it should have free discussion.

It should be added, however, that the article quoted was written before the appearance of a letter from Lord Moran, indicating some of the difficulties of a move from the point of view of the College of Physicians.

Bovine Endocarditis: A Brief Review, with a Note on an Abattoir Case

E. W. ASCOTT, B.SC., M.R.C.V.S.

Bovine endocarditis, while not a common condition, has been reported in veterinary literature from time to time.

Gowing, quoted by Hill[1], reported nearly 100 years ago, a case of endocarditis in a cow. At autopsy, there was "a dark mass of matter, the size of a fist," nearly filling the left auricle and passing into the left ventricle and into two of the pulmonary veins. It was adherent to the mitral valve and to the auricular wall. W. Williams, also quoted by Hill[1], recorded the case of a cow which suffered from "rheumatic arthritis" for three months before death, and stated that there were 25 warty excrescences on the tricuspid valve, *cordae tendinae*, *columnae carnae*, and traces on the mitral valve.

Euken[2], who has had a number of cases, reports greyish-yellow, spongy or crumbly masses attached to the tricuspid valve and small, reddish-brown eminences on the mitral valve.

Morris[3] describes briefly two cases. One showed fibrous growths with necrotic centres on the valves. The other showed a large abscess on the mitral valve, with small abscesses in the kidneys and muscles.

Symptoms.—In Gowing's case, there was progressive loss of weight over a period of several weeks, with occasional fainting attacks, from the last of which the cow did not recover. Leblanc and Gamgee, quoted by Hill[1], both noted, in endocarditis, the marked contrast between the violent heart beats and the smallness of the pulse. Leblanc also noticed a loud metallic tinkling as well as a bellows murmur, while Gamgee reported a marked venous pulse and, in the later stages, dyspnoea.

Euken[2] appears to have no difficulty in differentiating from traumatic pericarditis. He reports progressive loss of weight, oedematous swellings on the brisket and dewlap, a bellows murmur, and slight icterus.

Morris[3] also observes oedema of the dewlap and "thumpy" heart sounds.

Udall[7] reports diminished appetite and milk yield, accelerated pulse, jugular pulsation, and shifting lameness. Death was preceded in some cases by oedematous swellings.

Aetiology.—Ostertag[4] states that Nieberle recorded *C. pyogenes* as one cause of ulcerative endocarditis in the ox, and that lesions may occur also in the kidneys and myocardium. Ostertag[4] also quotes Bergeon, who described a case of tuberculous endocarditis in a cow affected also with tuberculosis of the lungs and pleura.

Petersen[5] records an abattoir case in which streptococci were seen in sections prepared from valvular lesions.

Cocu, quoted by Hutyra and Marek[6], found the larvae of *F. hepatica* in coagulated plasma on the heart valves, and Euken[2] sees in this a possible origin for many of his cases, most of which showed well-marked fasciolasis of the liver.

Morris[3] reports that bacteriological examination of one of his cases showed the presence of streptococci (species not stated).

Udall[7] states that cultures from fibrinous valvular lesions in a nine months old calf yielded *Bact. coli*.

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An abattoir case of endocarditis was encountered by the writer. No *ante-mortem* history was available, except that the cow had entered the slaughterhouse through the usual market channels and was not an emergency slaughter case. The *post-mortem* findings were as follows :—

Viscera. *Heart.*—Verrucose endocarditis affecting the mitral valve, identical in appearance with the heart lesions commonly seen in chronic swine erysipelas ; pockets of pus in the tissue surrounding the origin of the aorta ; slight fatty degeneration of the myocardium.

Lungs.—Very marked passive venous congestion ; colour, dark red.

Liver.—Enlarged and congested ; fatty degeneration.

Kidneys.—Passive venous congestion.

Intestines and Mesentery.—Oedematous.

Carcase. General state of nutrition good. The musculature was oedematous, dark, slimy and had set very badly.

The physical condition of the carcase, and the possibility of widespread infection of the meat from an endocarditis of unknown aetiology, rendered it unfit for food.

Bacteriological examination of the valvular lesions yielded only *B. proteus*, as unfortunately, the specimen had been grossly contaminated in the slaughterhouse.

Acknowledgments.—Thanks are due to Mr. W. A. Pool, I.B.A.H., for help with references, and to Capt. N. Bissett and Mr. R. H. Duff for their bacteriological examination of the case.

References

[1]Hill, Woodroff J. (1882.) Bovine Medicine and Surgery. pp. 93-100

[2]Euken. (1929.) *Deuts. tierärztl. Wschr.* **37**. 263 4.

[3]Morris, J. M. (1944.) *Vet. Rec.* **56**. 119-121. (Cases 18 and 28.)

[4]Ostertag, R. (1934.) Textbook of Meat Inspection. Eng. ed. p. 173.

The "Vena Flask"

A Useful Apparatus for Veterinary Practice

R. E. WILLIAMS and R. W. ROACH,
Bristol

Introduction

The purpose of this note is to call attention to a piece of apparatus originally designed for the medical profession, but which has many applications in veterinary practice. Eminently suitable for the injection of large amounts of fluid of all types into animals, and for the collection of quantities of blood, the apparatus presents a workmanlike appearance, and, since it is easily sterilised, these operations can be carried out aseptically.

Description of the Apparatus

The "Vena Flask" consists of a hard glass bottle, holding slightly over a litre, graduated in millilitres and ounces. The graduations are duplicated for use in the upright or inverted position. There are two caps, an inner one to seal the flask, and an outer cap as a protection against contamination. The bottom of the flask is fitted with a metal loop by which it may be suspended. The flasks have proved extremely durable and withstand hard usage and constant boiling. The capacity of the flask is such as to facilitate the computation of percentage solutions.

Fig. 1 shows the flask fitted with the "Vena-Collector" and assembled for the collection of blood.

Fig. 2 shows the flask fitted with the "Vena-Dispensor" for infusions and injections.

Fig. 1 Fig. 2

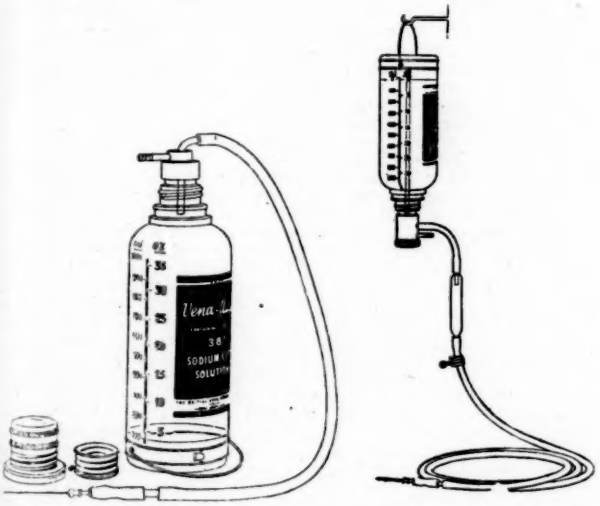

Fig. 1.—The apparatus assembled for blood collection. (When used with large animals it is better to do without the needle adaptor and to fit the needle on to the tubing directly.)

Fig. 2.—Apparatus assembled for infusion or injection. Notice that the "Vena-Dispensor" tube reaches the whole length of the bottle.

The rate of flow, which is controlled by a clip on the rubber tubing and the height to which the bottle is raised, may be gauged by direct observation of the glass drip apparatus. A wire gauze filter which fits over the outlet vent of the dispensor prevents blood clots or other foreign matter entering the delivery tube.

Method of Use

I.—Collection of Blood from Large Animals

The flask should contain 10 ml. of 3·8 per cent. sterile sodium citrate solution, per 100 ml. blood to be collected. A French's blood needle is most suitable for rapid collection. Sufficient rubber tubing should be provided to allow for movement on the part of the donor, and should contain a glass tubing window, a few inches from the needle, to show when the flow of blood has commenced. The blood is mixed with the citrate by continuous rotary movement of the flask during collection. For storage after collection the "Vena-Dispensor" is quickly replaced by a sterile cap. If aseptic precautions are taken throughout, the blood will remain sterile for three to four weeks at 4° C.

Indications

(*a*) Collection of sterile blood for laboratory use in media making, blood culture, etc.

(*b*) Collection of blood for transfusion as indicated in the following circumstances:—

1. Early treatment of calf scours.
2. Prophylactic treatment of navel ill in foals.
3. Collapse, as in severe haemorrhage.
4. Toxaemia.
5. Blood destruction (Babesia infections).

II.—Injections and Infusions by Gravity

The flask is fitted with the "Vena-Dispensor" as is seen in Fig. 2. In the rare event of a cow-byre providing no suitable projection on which to hang the flask this may be held aloft on a pitch fork.

The advantages of infusion by gravity are that the apparatus is kept away from the dung, is compact, rapid administration and maintenance of even pressure throughout infusion is obtained, and single-handed working is facilitated.

Indications

(*a*) *Udder Infusion.*—With the clip open a head of 5 feet will provide adequate speed of infusion. A "Y" piece fitted to the rubber tubing will allow the operator to infuse two quarters simultaneously. In view of the modern tendency to limit the total amount of infused fluid, the contents of one flask are generally sufficient for each cow.

(*b*) *Intravenous Injections.*—The delivery tube is fitted with a Record needle adaptor. A rate of flow suited to the fluid to be injected, is obtained by adjustment of the screw clip. Cessation or irregularity of flow generally indicates that the needle is no longer in the vein. Large quantities of fluid are administered intravenously in the following circumstances:—

1. Blood transfusion.
2. Saline infusion.
3. Soluble sulphonamide administration.
4. Chloral hydrate narcosis.
5. Calcium administration.
6. Sodium iodide treatment of actinomycosis, etc.

(*c*) *Other indications* are subcutaneous injections, uterine irrigation, wound lavage, bladder irrigation, etc.

III.—Injections under Positive Pressure

The "Vena-Dispensor" is used, the delivery tube being fitted to the upper arm and the pressure to the lower. It is important that the air pump should carry a reservoir bulb to maintain even pressure.

Use in the Laboratory

Since the flask will withstand autoclaving and the double caps ensure sterility, it is suitable for the storage of media. This applies particularly to agar which can be melted and poured direct with the "Vena-Dispensor," thus reducing possible contamination. When pouring deep plates, the delivery tube is fitted with a short length of 6 to 8 mm. glass tubing and delivery controlled by a pinch-cock.

Miscellaneous Points

The rim of the bottle is liable to chip if the dispensor is screwed up tight on the wrong thread, but in such cases the bottle may be rendered still serviceable by the use of a flutter valve apparatus.

The apparatus is cheap and may be obtained from the suppliers empty or containing various sterile solutions. Full details can be obtained from the B.D.H. pamphlet, "The B.D.H. Vena Flask and Its Use in Intravenous Therapy."

[4]Petersen, W. W. (1934.) *Skand. Vet.-tidsKr.* **24.** 290–296. (Eng. summary.)
[5]Hutyra and Marek. (1938.) Spec. Path. Ther. Dom. Animals. 4th Eng. ed.
[6]Udall, D. H. (1939.) The Practice of Veterinary Medicine. 3rd ed. pp. 225-7

STAINLESS IODINE

The question of the value of so-called colourless tincture of iodine has again come under discussion. Although published reports have hitherto denied to this preparation any of the therapeutic properties of iodine, there is a fairly considerable demand for it among some sections of the public. Academic opinion is inclined to scoff at the preparation and to denounce its use because it is not only a waste of valuable materials, but also it encourages an entirely false sense of security. Now, however, some modification of these views seems indicated in the light of the work of Jackson and Rowe. Tincture of Iodides—if we accept the term "tincture" for a solution of this type—is a better title than Colourless Tincture of Iodine. But perhaps a solution of sodium or ammonium iodate would be equally effective. The bacteriostatic effect reported against haemolytic streptococci shows that this preparation has more value as a first aid dressing to cuts and abrasions of the skin than the pundits have been willing to admit. Another example of the way in which theory does not always fall into line with practical experience.—*Pharm. J.*

CLINICAL COMMUNICATIONS

Cerebral Abscesses in a Buffalo Cow

M. MAQSOOD

Punjab Veterinary College, Lahore

The subject, an emaciated Murrah buffalo cow, aged about eight years, was admitted to the Punjab Veterinary College Hospital, Lahore, with undiagnosed brain disease symptoms. It died three days later.

For a week prior to admission the buffalo had pushed her head against the wall of the shed and at intervals turned in circles when tethered. She did not eat and rumination was in abeyance. The milk secretion had ceased. Three weeks previously an abscess had developed in the right parotid region, which was opened and the wound healed up in about ten days; about four days later the area became swollen and hot fomentations were applied, and the swelling disappeared within three days.

On admission the animal was dull and listless, with the head hanging down and the eyes partly closed. The temperature was 101·4° F. and the pulse rate was accelerated. There was disinclination to walk forward and when disturbed she turned in circles to the right, with the head hanging down and slightly turned towards the same side.

On the following day the condition was the same, the buffalo standing in the stable with the head pressed against the feeding trough. When disturbed she walked aimlessly in circles, turning always to the right side. While walking the left fore-limb was not lifted properly. The left side of the neck and the left fore-limb lacked sensation. Both the conjunctivae were congested, and the left pupil was dilated. The temperature was 101·2° F. She was unable to feed or drink water and did not pass any faeces.

On the third day the breathing was laboured with the nostrils dilated. She was weaker, trembling and unable to stand when moved from the wall against which she pressed her head. She fell down and after about two hours got up with difficulty, made some erratic movements, staggered and again fell down. Both the eyelids, the left side of the neck, the left fore and hind limbs were now almost paralysed. The corneal reflex was absent from the left eye. Respirations became very much laboured and there was cardiac arrhythmia. Later in the day she was lying almost unconscious. The temperature was 97·4° F. and the pulse weak and slow.

On the fourth day the animal was found dead, lying on its right side.

Three abscesses about the size of a hen's egg, a marble and a pea respectively, were found in the right cerebral hemisphere, presumably extensions of the early parotid infection. The largest of these was situated in the lateral ventricle and the surrounding brain tissue and the other two were situated posterior to it and about two inches apart. The pus was slightly yellowish in colour and of a thick consistency. Pyogenic cocci were present in smears of the pus.

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Rupture of the Heart in a Bullock

M. MAQSOOD

A Hissar bullock, age about seven years, had a simple wound on the right side of the chest near its dorsal border and was being treated as an in-patient in the Indoor Surgical Section of the Punjab Veterinary College Hospital, Lahore. Four days after admission the wound had practically healed up.

On the fifth day the animal slipped in the stable, fell down on its right side and died within a few minutes.

Post-mortem Examination.—The pericardial sac was found to be greatly distended and was filled with coagulated blood. There was a transverse rupture of the right auricle, about ½ inch from the origin of the posterior vena cava, about two inches in length, the borders presenting a ragged appearance and a zigzag course. The right auricle had a weaker musculature than that of the opposite side and it is suggested that when the animal fell the weak tissue ruptured.

A farm policy of enlarging Canadian cattle herds, begun two years ago, appears to have reached its peak with official estimates that inspected slaughterings in 1944 may reach a record of 1,300,000 head. Extension of Canadian herds to meet beef requirements became possible on a large scale in 1942 following a rich crop of feed and other grains, which permitted farmers to set up reserves and plan their herds for a considerable period ahead.—*Meat Trades Journal.*

ABSTRACTS

[Sheep Blowfly Research. (Various Authors.) *Onderstepoort J. vet. Sci.* **18.** Nos. 1 and 2. July and October, 1943.]

Dr. P. J. du Toit, in an editorial footnote (p. 13), states that although blowflies have been present in South Africa for many years and that excellent pioneering work on these insects was carried out by Smit and others, it is only in recent years that these destructive parasites have increased to such an extent that they have become a serious menace to the sheep and wool industry. Special measures were necessary to meet the urgency and seriousness of the problem and so a team of workers was brought together to study the various aspects of the subject. The following series of articles contain the first results of this joint work carried out under the immediate direction of Dr. H. O. Mönnig, Head of the Section of Parasitology at Onderstepoort. Other urgent problems, however, made the continuation of this collaboration impossible and the work has had to be pursued on a reduced scale. Further articles in the series are promised.

I.—A Survey of Maggot Collections from Live Sheep and a Note on the Trapping of Blowflies. By G. A. Hepburn. (pp. 13-18.)

From 324 collections of maggots from live sheep at Onderstepoort, Dohne, C.P., and the main sheep-farming areas of the Union of South Africa, 179 or 55 per cent. were composed solely of *Lucilia cuprina,* and in combination with other species this fly was responsible for about 90 per cent. of the total strikes. *Chrysomyia chloropyga,* as a sheep myiasis producing fly, comes next in importance, while *L. sericata* plays a minor rôle. The seasonal abundance of the blowflies was obtained from trapping records at Onderstepoort. The necessity of exposing selective baits in traps is emphasised, since it is known that *L. cuprina* is more readily attracted to meat-bait in the early stages of decomposition than to baits in the more advanced stages of decomposition, whereas *Chrysomyia albiceps* is attracted more to the latter.

II.—Suint Investigations. By M. C. A. Nolte. (pp. 19-25.)

The author attempted to isolate and estimate some of the organic acids, chiefly lower fatty acids, said to be present in small quantities in suint. Owing to the small amounts present, a satisfactory separation of these acids could not be achieved., except the identification of benzoic acid as a decomposition product of hippuric acid.

III.—Studies on the Olfactory Reactions of Sheep Blowflies. By G. A. Hepburn and M. C. A. Nolte. (pp. 27-48.)

It is pointed out that the properties of an ideal bait are that (*a*) it should be very attractive to *Lucilia cuprina,* (*b*) it must be attractive for a reasonably long period, thus obviating its frequent renewal, (*c*) it must be cheap, and (*d*) it must be readily procurable and easy to prepare. With the object of trying to find a bait which would meet all requirements, the authors tested certain substances under field conditions in traps and by means of an olfactometer in the laboratory in a search for olfactory attractants to sheep blowflies. Of certain alcohols, aliphatic acids, esters, organic sulphides and inorganic salts tested in the laboratory, it was found that boiled and unboiled solutions of sodium and potassium hydroxide attracted *L. cuprina,* while undiluted natural civet and musk ketone (which is a dinitro derivative of tert. butyl acetophenone or a similar ketone) were weakly attractive. Sodium bicarbonate was repellent, while Dippel's oil, carvone and linalool were strongly repellent. In general, preparations of suint were found to be unattractive. The chemical treatment of meat bait by the addition of cystine, calcium carbonate, calcium sulphide, sodium carbonate, sodium sulphide, and phenothiazine enhanced its attractiveness, while the inoculation of meat bait with a mixed culture of bacteria from sheep's intestines increased attractiveness. Although they were not so enticing as meat baits, fermenting baits such as fish meal, pancreatin and egg, and addled eggs also proved to be attractive. Extraction by ethyl ether of some of the attractive substances of beef bait was carried out but these chemicals were not isolated or identified; it was found that a portion of these attractive substances was apparently removed from the ether solution by potassium hydroxide solution but not by sulphuric acid. In the drier parts of the Union of South Africa there occur certain interesting xerophytic plants of the genus *Stapelia,* which produce remarkable flowers emitting an odour strongly resembling that of decomposing carrion, and the flowers of *S. flavirostris* are strongly attractive to and stimulate oviposition of *L. cuprina.* It was found that distillates of these flowers were attractive but no chemicals were isolated or identified and the authors recommend the further investigation of the chemistry of these flowers. From their results and the work of other investigators with hundreds of substances tested in this field of research, the authors conclude that no blowfly attractant superior to chemically treated beef bait has been found.

IV.—Field Tests with Chemically Treated Carcases. By G. A. Hepburn and M. C. A. Nolte. (pp. 49-57.)

The authors carried out field tests using guinea-pig carcases in

traps with the objects of (*a*) regulating, if possible, the *p*H of carcases at a stage attractive to primary flies, and (*b*) trying to find a poison which would meet this requirement and also render the carcases toxic to visiting flies and their progeny. It was concluded, from the results obtained, that the attractiveness of carcases and meat baits does not depend on the *p*H level alone but appears to depend upon a number of factors, including the composition of any added chemical, *e.g.*, where calcium and sodium sulphides were added to meat a *p*H of 12 was recorded, yet the baits were attractive. The *p*H of opened carcases could not be satisfactorily controlled by dusting chemicals upon them and it is considered unlikely that better results would be obtained by substituting solutions of chemicals for powders. Because of this, it was found impossible to maintain the *p*H of carcases at a stage attractive to flies.

V.—Carcases as Sources of Blowflies. By G. A. Hepburn. (pp. 59-72.)

Hepburn describes his technique of exposing to blowfly attack sheep carcases in specially constructed rectangular metal troughs and the subsequent collection of migrating larvae and the trapping of emerging adults with the aim of determining what species of flies breed in carcases exposed under field conditions in South Africa. Fly populations from small animal carcases, in addition to those of sheep, were also bred at various seasons of the year. The phenomenon of succession and competition of the primary, secondary and tertiary fly inhabitants of carrion first postulated by workers in Australia, where the blowfly problem is probably a more complex one than in South Africa, was demonstrated by the author. It was found that *Lucilia cuprina, L. sericata* and *Chrysomyia chloropyga* mainly constituted the populations of flies bred during the cool time of the year, while *Ch. marginalis* and *Ch. albiceps* constituted the populations during midsummer. The two species of *Lucilia* are usually the first visitors to fresh carcases followed almost immediately by *Ch. marginalis* which, when abundant, is attracted to carcases in the first stage of decomposition. The fly populations from small and large carcases were, from available records, assumed to be very similar in composition. A salient point to be noted is that small carcases can produce many blowflies and, most important, many primary flies, which initiate sheep strike, *e.g.*, 344 *L. cuprina* from a small *Otomys* rat about four inches long. The author puts forward certain suggestions for the treatment of carcases as a means of controlling blowflies particularly when they breed *Lucilias* and *Ch. chloropyga* and also discusses the burial, combined with the poisoning, of carcases containing maggots to control the emergence of primary flies at such times of the year when these flies are usually successful breeders in carrion.

VI.—The Treatment of Myiasis. By H. O. Mönnig. (pp. 73-84.)

The author records the results of tests carried out during the preparation of a blowfly dressing which would be rapidly lethal to maggots and would cause the strike wounds to become unattractive to blowflies and to dry and heal quickly. As tests, *in vitro*, of contact larvicides on maggots were found to be unreliable they were made on artificial strikes. During the evolution of the dressing it was found that the larvicidal efficacy of neutral tar oils was greatly increased by the addition of alcohol and that the further addition of a suitable acid increased larvicidal efficacy, made wounds unattractive and promoted rapid healing. Mönnig describes a dressing which has given good results in field tests in South Africa and which is also effective for treatment against screw-worm (*Chrysomyia bezziana*) in cattle. The dressing also readily killed ticks on animals and gave good results in a few cases of sarcoptic mange. It had no adverse effect on the human skin. In an addendum, Mönnig points out that, when the production of this blowfly remedy had started on a large scale, it soon became evident that certain difficulties in the supply and manufacture of some of the ingredients would necessitate the modification of the original mixture. As the result of further tests the following mixture was made:—

	% *volume*
96 per cent. alcohol	40·0
Mineral oil (S.A.E. 60)	5·0
Mineral oil (C.1. Fuel)	10·0
Cresol	2·5
Sulphuric acid	0·15
Benzol	21·175
Neutral creosote oil (B.P. 200-240° C.)	21·175

The efficacy of this modified mixture is stated to remain as high as that of the original one.

J. N. O.

* * * * *

[Field Use of Sulphathiazole in Some Diseases of Poultry. Wernicoff, N. E., and Goldhaft, T. M. (1944.) *Cornell Vet.* **34**. 199-213.]

The authors record their experiences with sulphathiazole in the treatment of certain respiratory conditions of poultry and fowl cholera. The numbers of birds treated and the nature of the diseases were as follows: 70,355 affected with acute coryza; 7,100 with chronic coryza; 6,500 with infectious bronchitis and 2,000 with fowl cholera; 1,200 ducks affected with fowl cholera were also included.

The sulphathiazole was mixed with the dry mash at the rate of ½ lb. per 100 lb. of mash. The method proved unsatisfactory, if wet mash was used, the mixture becoming bitter and unattractive to the birds and consumption being greatly reduced in consequence.

The best response was obtained in cases of acute coryza. Improvement was marked after three or four days and by the tenth day coryza had almost disappeared. When treatment was introduced early, recovery was more rapid and there was less likelihood of a recurrence of the disease in the flock. Since the treatment proved of little value in any of the other conditions but almost invariably produced favourable results in cases of acute coryza, recovery after treatment was regarded as a very useful means of confirming a diagnosis of this disease. The one exception to this was the successful response to treatment in a flock of ducks suffering from fowl cholera.

As recovered birds may remain carriers of coryza and be a source of danger to birds added to the flock later, the authors suggest that all new arrivals should be treated with sulphathiazole on being introduced to the flock. N. S. B.

IN PARLIAMENT

Medical Education and Research

Mr. Willink, the Minister of Health, in a written reply relating to the report of the Interdepartmental Committee on Medical Schools, states that the committee have recommended a comprehensive programme for the reform and development of medical education and research. Certain of the matters involved would require legislation, and these the Government propose to discuss with the bodies concerned. Apart from these, the committee's recommendations are in the first place for the responsible educational authorities to study in framing their future policy, and the Government accordingly invite universities, medical schools, and teaching hospitals to give the report early consideration.

Recognising the fundamental importance of medical education and research to the future of the country's health services, the Government accept the principle of increased grants for the purposes of medical education and research to be distributed by the University Grants Committee through the universities to medical schools, post-graduate schools and institutes, and hospitals used for teaching and research. They also accept the suggestion that for a limited period these additional grants should be separated from the block grants received by universities for their work as a whole. The amounts of grant to be made from time to time, whether for capital or for recurrent expenditure, will be determined after consideration in the light of the recommendations of the University Grants Committee and the general financial position prevailing.

The Government share the views expressed in the report on the importance of affording to women equal opportunities to those enjoyed by men for medical training and for obtaining post-graduate experience. They have, therefore, decided, as recommended by the committee, that future payments of grant to medical schools should be conditional on the adoption by the school of the principle of admitting a reasonable proportion of students of both sexes. They recognise that schools at present open to one sex only may need periods of varying lengths to adjust their arrangements to a co-educational basis, and they therefore propose that the University Grants Committee in consultation with the university authorities concerned should be charged with the responsibility of determining from time to time whether the action taken by each of these schools complies with the principle to the extent that is reasonable.

The Government attach equal importance to the revision of the medical curriculum, and their acceptance of the principle of increased grants for medical education and research is dependent on the early completion of this process. They are, therefore, glad to learn that, as recommended by the committee, the General Medical Council has already taken the initiative in the matter.

Questions

Medical Books

Major Neven-Spence asked the President of the Board of Trade whether he is prepared to increase the paper quota available to the medical group of publishers in order to counteract the growing decline in the production of medical books.

Captain Waterhouse: Quotas of paper are based on publishers pre-war usage and do not vary with the types of books they produce. My right hon. Friend, however, arranged last autumn for a substantial increase in the special reserve for books of particular importance, including medical books, which publishers cannot produce form their quotas.

Questions and Answers

"Questions and Answers" will be published on alternate weeks.
The submission of questions for inclusion in this column will be welcomed. They can relate to any aspect of veterinary work and where publication of the name of the enquirer is not desired, a pseudonym should be supplied, the name and address also being given.
Answers to readers' queries represent exclusively the personal opinions of the writers, and criticism of the replies will be appreciated.
All communications should be addressed to the Editor.

The Closed Plaster Treatment of Wounds

Q.—*Can you please give me any information regarding the closed plaster method of wound treatment?—Doubtful.*

A.—I presume that your correspondent in his question alludes to the closed plaster treatment of compound fractures. In the past and especially after Lister introduced his antiseptic methods of the treatment of wounds, which followed Pasteur's discoveries almost as a natural sequence, it has been the custom when immobilising a compound fracture to leave the wound exposed so that it could be inspected and dressed frequently. This method continued even after aseptic methods of treatment were introduced. The latter of course involved the complete clearing of all infected tissue, so leaving a wound which by all tenets should heal by first intention. The results were greatly in advance of those previously obtained and so impressed were surgeons with the necessity of free access to such a wound that it would have been considered malpractice or negligence to bury such a wound from view: many methods of providing for a window in a plaster cast have been devised.

During the recent Spanish Civil War the medical arrangements and personnel were not adequate or sufficient to carry out such technique. Compound fractures were perforce put up in plaster and the wounds buried. This was due to the fact that the difficulties of getting the patients to reasonable hospital treatment, *i.e.*, difficulties of transport, etc., made it of more importance to immobilise the damaged limbs than to give attention to the wounds. Now a great number of these plasters were not inspected for many days, and when they were inspected it was noticed that the wounds were in a state of healthy healing and this in spite of stinking discharge, etc., which by that time had soiled the plaster. The patients were in a better state generally than they could possibly have been expected to be. This phenomenon did not escape the eye of a Dr. Trueta. He was quick in recognising the obvious advantage of complete immobilisation as soon as possible after injury, in, if necessary, a completely closed plaster cast.

This came as a shock to orthodox surgeons, whose training had made them too germ conscious with their dressings, antiseptic and aseptic, and their continuous inspections. At first the surgical mind was aghast, but fortunately there were those who, in view of the results manifested, were prepared to give the method a trial and let nature, through the agency of the injured tissue, have a chance to carry on her beneficial work unhindered by antiseptics, etc.

This is the underlying principle behind the so-called closed treatment. Nowadays, if circumstances permit, all grossly infected tissue and any irritant contamination is removed and the wound is made as clean as possible before the plaster is applied. If there is any doubt as to the cleanliness of the wound the operator can derive great assistance from the use of the sulphur compounds.

It is remarkable that it has been necessary to undergo the horrors of two wars to bring the two great factors in the healing of any tissue home to roost, *i.e.*, that there shall be as near as possible complete rest to the part and the natural reparative process inherent in any tissue shall not be impeded. The latter has been practised by many veterinary surgeons from time immemorial in the case of the post-operative treatment of fistulous withers and poll evil, when they have found that the less they interfered with the wounds the quicker and better the healing.

There is a closed treatment for wounds, especially those caused by burns and scalds, but this does not involve the use of plaster.

Injection for Intractable Horse

Q.—*What hypodermic injection will quieten an intractable horse, so that it can be clipped without sweating? Frequently this type of horse cannot be balled or drenched.—"Query."*

A.—The respondent is unaware of any reliable hypodermic injection which will quieten an intractable horse. Morphia is definitely unreliable, for it may have an opposite effect to the one desired. Often the stomach tube can be used in a horse which cannot be balled or drenched. If this is so one to two ounces of chloral hydrate, depending upon the size of the animal, will produce the necessary quietude. Another method which sometimes works is to keep the animal without water for 48 hours and then administer chloral in half a pail of drinking water which has been liberally "salted" with sugar.

My favourite method, however, is to smear two to four drachms of extract of cannabis indica on gauze or muslin which can be tied in the mouth after the manner of a bit. This should be done an hour to one hour and a half before operating. This was our favourite way with horses intractable to shoe and it worked in the majority of cases.

Lack of Response to Ca. Borogluconate and Inflation in (?) Milk Fever

Q.—*An advanced case of milk fever has been given over a period of 24 to 36 hours two subcutaneous injections of calcium borogluconate (6 oz. in all) and the udder has been inflated, yet the animal shows little or no improvement. What is the best subsequent treatment and what is the blood analysis likely to have been before treatment was commenced?—J. S. S.*

A.—Milk fever would seem to be an unsatisfactory diagnosis in such a case. Hypocalcaemia is always present in milk fever but relapses and non-recovery may be influenced by other plasma factors.

At the initial examination of a patient an attempt at a clinical estimation of the probable results of a biochemical analysis greatly assists in the choice of therapy. The behaviour of the patient and the response or otherwise to the chosen agent, are sure and certain indications to the attending clinician.

Taking the case as stated in the question "An advanced case of milk fever" suggests that the pathological process had reached the stage of narcosis or coma. In the absence of a continuing trend towards recovery four hours after a subcutaneous injection of calcium borogluconate, a review of the diagnosis would help.

Intravenous injection of a second 3 oz. of calcium borogluconate in solution along with udder inflation might have given a better response than the actual therapy employed. The presence of acetonaemia might have been tested for in the expired air or urine if necessary: if confirmed, an intravenous injection of a 40 per cent. solution of dextrose often gives a prompt result.

Acid sodium phosphate dissolved in warm water and given by stomach tube passed through the mouth would help to correct the likely hypophosphataemia and also relieve tympany.

An analysis of a sample of blood taken before treatment is likely to show something approaching the following:—

Calcium	3·3 mg. per cent.	} Narcosis.	
Magnesium ...	2·9	" "	
Acetone	15·0	" "	Acetonaemia.
Blood sugar ...	40·0	" "	Hypoglycaemia.
Inorganic phosphorus	1·6	" "	Hypophosphataemia.
Haemoglobin ...	11·0 g. per cent.		

Such a cow would go into narcosis $\left(\frac{Ca}{Mg} = \frac{3{\cdot}3}{2{\cdot}9} = 1{\cdot}1.\right)$. Lack of movement would cause bloating of the rumen and, if not treated promptly, the animal would be liable to relapse after treatment.

Disease "Clinically Resembling Distemper"

Q.—*Mention has been made in the dog-fancying Press of a disease of young dogs clinically resembling distemper, but against which neither the "Field" method of immunisation nor massive doses of distemper serum give any protection. Is anything known of such a disease, and, if so, what is its nature?—A.H.A.*

A.—Infection with distemper virus does not produce the serious clinical condition seen in a developed case of distemper. It so very often opens the way to infection with secondary bacteria that the syndrome which is generally accepted as that of distemper is a manifestation of the effects of both the virus and the secondary invaders, the latter the more prominent. One of the common secondaries is *B. bronchisepticus* and this bacillus may, by itself, set up a disease very closely simulating the developed case of distemper. Individual cases, even outbreaks, of a disease which the clinician might properly diagnose as distemper have occurred in which distemper virus was not involved but in which a virulent strain of *B. bronchisepticus* was, at the least, the main infecting agent. It is relatively unusual for these secondaries to be the primary cause of disease. Much depends on the virulence of the strain and the effect of some factor which lowers resistance. The most common cause of lowered resistance leading to infection with these bacteria is, undoubtedly, infection with distemper virus. Protection against virus infection greatly reduces the risk of disease due to such bacteria. It will not, of course, prevent them causing infection, particularly, if by passage, they have assumed a high virulence or if some other factor is the primary cause of the illness.

We know of no thorough investigation of the disease to which reference is made, but we suspect that it is due to one or more of the organisms commonly secondary to virus infection, possibly largely to a virulent *B. bronchisepticus*. If this be so the disease might be prevented by the use of a good anti-bronchisepticus serum which would also have a place in its treatment. There is no good evidence that the use of appropriate vaccine can establish a high level of protection in young puppies, which it is accepted are difficult to actively immunise.

Correspondence

Supply of Tuberculin-tested Milk

Sir,—May I make a few remarks with regard to the query in your "Questions and Answers" column of December 30th, 1944, re the marketing of tuberculin-tested milk?

In the first paragraph of the reply it is stated that the Ministry of Food favourably considers the question of re-registration of customers requiring tuberculin-tested milk and though in theory this is so, I feel that it should be more generally known that in practice it is almost impossible.

In summer, 1942, I wanted tuberculin-tested milk for my baby and my retailer producer, milkman "A," could not supply it. For three months I pestered the Food Office, who refused to do anything. In December I obtained a doctor's certificate and after a further 2½ months it was arranged that milkman "A" must retain the registration but could ask milkman "B" to deliver tuberculin-tested milk supplied to him by producer "C." This despite the fact that three milkmen delivering along the road could have supplied me direct.

In July, 1943, producer "C" said he could no longer supply milkman "B" with the milk as he had no registration, but after several weeks' parley with the Food Office the arrangement was resumed.

In July, 1944, this happened again, and at the same time I wanted to register for my green book as an expectant mother, with a retailer who would supply tuberculin-tested milk direct. Even this was refused and I was compelled to register with milkman "A" again.

Finally the Food Office compelled milkman "A" to supply me with tuberculin-tested milk, which he had to collect from retailer "D" (to whom it was supplied by producer "E") and send it by special delivery to me, daily, although retailer "D" himself delivers along the road.

Is this the way to encourage the public to drink tuberculin-tested or any other special grade of milk?

Yours faithfully,

"Auchtertyre," Meadway Drive, Horsell, Woking, Surrey. RUTH HUSSEY.

January 14th, 1945.

Boro-gluconate Solution for Milk Fever

Sir,—I think that if practitioners adopt the following prescription for the boro-gluconate injection they will have no further abscess trouble:—

R Calcium gluconate	2 oz.
Ac. boric	3 drs.
Ac. carbolic	20 m.
Aqua	12 oz.

The acid is added after the calcium, acid boric and water have been boiled.

We make this up in larger quantities and fill up a 12 oz. bottle before going to a milk fever case.

The solution is injected subcutaneously in two or three places, the site is then massaged and the cowman is advised to massage it again in two hours. We have never had any abscess formation since adopting this method.

We also add carbolic acid to the mag. sulph. solutions.

The Burroughs Wellcome Flutter Valve Injector is very handy for injecting the solution, especially when the cow is staggering about.

Yours faithfully,

Ross-on-Wye. P. S. and R. P. MORGAN.

January 14th, 1945.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Jan. 31st.—Issue of Overseas Voting Papers, R.C.V.S. Election.
Feb. 1st.—Meeting of the Central Veterinary Society at the Conway Hall, Red Lion Square, W.C.1, 2 p.m.
Feb. 2nd.—Meeting of the Sussex Division, N.V.M.A., at Brighton (Ship Hotel), 2.15 p.m.
Feb. 21st.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, 1, Wimpole Street, W.1, 2.0 for 2.15 p.m.
April 1st.—R.C.V.S. Annual Fees due.
April 11th.—R.C.V.S. Committee Meetings.
April 12th.—R.C.V.S. Committee and Council Meetings.
May 8th.—R.C.V.S. Council Elections—last day for nominations.
May 22nd.—R.C.V.S. Council Election—Voting Papers issued.
May 29th.—R.C.V.S. Council Election—Voting Papers to be returned.
June 5th.—R.C.V.S. Annual General Meeting.
June 6th.—R.C.V.S. Committee and Council Meetings.

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Roll of Honour

LIEUT. JOHN W. MACEWAN

The many friends of Mr. Neil A. MacEwan, M.R.C.V.S., and Mrs. MacEwan, "Craigard," Wigtown, will learn with deep regret of the grievous loss sustained by them through the death of their only son, Lieut. John W. MacEwan, who died of wounds sustained in action in Western Europe. He was a student at Glasgow Veterinary College and although he was reserved he volunteered for service. He was commissioned in the Tank Corps and was later transferred to the King's Own Scottish Borderers—his county regiment. By his death Mr. and Mrs. MacEwan have been dealt a great blow and the profession has lost a young man of very great promise.

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R.C.V.S. OBITUARY

ELPHICK, Edwin Eli, M.R.C.V.S., D.V.H. (Liverpool), Major late N.Z.V.C., Normans Road, Christchurch, New Zealand. Graduated London, July 12th, 1904. Passed away suddenly January 15th, 1945.

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PERSONAL

The New Year Honours.—In the second section of the New Year Honours List announcement was made of the award of the M.B.E. (Military Division) to Mr. Peter Zambra MacKenzie, of the Veterinary Department, Sudan Government. He was seconded from the Sudan Civil Service to serve in the Sudan Defence Force with the rank of Bimbashi. Most of his service was in Command of Camel and Mule Columns in Eritrea. Mr. MacKenzie has now returned to his civil post and is at present stationed at Wad Mudani.

Births.—HARRIES.—On December 27th, 1944, at Wellington Nursing Home, to Mary (*née* Petheram), wife of L. G. Harries, B.Sc., M.R.C.V.S., Taunton, a daughter Carolyn, a sister for Gillian.

TURNBULL.—On January 16th, 1945, at Forbes Frazer Hospital, Bath, to Joyce (*née* Irving), wife of Peter Turnbull—a son, Peter Richard Gofton.

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UNIVERSITY OF LONDON EXAMINATIONS IN VETERINARY SCIENCE

Following is the Pass List for the December, 1944, University of London Second Examinations in Veterinary Science: Bennett, Phillip Martyn; Murray, Mitchell Durno; Warren, Alan George; White, John Anthony—all of the Royal Veterinary College.

* * * * *

"British Agriculture and War Conditions" is the subject of the address to be delivered by Earl De La Warr at the meeting of the Farmers' Club to be held at The Royal Empire Society, Craven Street, W.C.2, on Monday, February 12th, at 2.30 p.m.

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DEVELOPING ANIMAL HUSBANDRY IN THE WEST INDIES

PROFESSOR MILLER'S SURVEY

The following announcement is made by the Colonial Office:—

"The need to develop animal husbandry in the West Indies has been recognised by grants made under the Colonial Development and Welfare Act, 1940. An important step is the approval of a free grant of £1,200 to enable a survey of animal husbandry conditions to be made throughout the area. The survey will be carried out by Professor W. C. Miller, of the Royal Veterinary College.*

"The question of diseases amongst stock in the West Indies has given cause for some concern, and it is hoped the survey will facilitate advances in the field of research and stock-breeding.

"Another grant which will benefit stock farmers in the West Indies is one for £3,800 for the establishment of a State Veterinary Service in St. Kitts Nevis."

* In the first issue of the year we informed our readers that Professor Wm. C. Miller, President, N.V.M.A., had left Britain for some three to four months during which he expects to visit, on behalf of the Colonial Office, most of the British Dependencies in the Caribbean area. Our announcement continued: "He will make a survey of the conditions of breeding, feeding and management of livestock, and the conditions of the livestock industry in the various Crown Colonies and report upon measures required to effect improvement. The survey will form part of the work being organised by Sir Frank Stockdale, the Comptroller-General of the West Indies, to establish a greater measure of self-sufficiency and self-dependence in the British West Indian countries."

FOOT-AND-MOUTH DISEASE

Since the announcements made in our last issue, an order restricting the movement of animals within the area "declared infected" has been made by the Ministry of Agriculture in consequence of the confirmation of the existence of foot-and-mouth disease at the following centres: Jan. 16th—Knowsley (Prescot, Lancashire); Jan. 18th—Middleton (Manchester); Milnrow (Rochdale); Jan. 19th—Thirsk (Yorks, N.R.), Hounslow (Middlesex), Eastbourne (Sussex).

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Addresses of Infected Premises

With the co-operation of the Animal Health Division we hope to publish, as a regular feature, for the information of practitioners in the district concerned, the addresses of premises on which the existence of foot-and-mouth disease, sheep scab or swine fever has been confirmed.

The following statement was received on Tuesday last:—

Foot-and-mouth disease: Four Fold Farm, Greenside Lane, Droylsden, Manchester, Lancs. (Jan. 20th, 1945).

Swine fever: 562, Fulbridge Road, Werrington, Peterborough; Slingsby, Yorks., N. Riding; The Grange, Melmerby, Wath, Ripon, Yorks, N.R.; High Farm, Hinderwell, Saltburn-by-Sea, Yorks., N.R.; Cooks Farm, Pilgrims Way West, Otford, Sevenoaks, Kent. (Jan. 20th, 1945.)

Sheep scab: *nil.*

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VETERINARY EDUCATIONAL TRUST APPOINTMENTS

Research Upon the Horse

Three veterinary surgeons, two seniors and one junior, a woman, have begun research upon the horse, particularly the thoroughbred, under the auspices of the Veterinary Educational Trust.

The woman is Miss Ann Russell, recently on the veterinary staff of the Ministry of Agriculture. She will investigate the problem of red worm infestation of horses and will work initially at Weybridge. The senior Research Fellows are Dr. J. A. Burkhardt and Mr. W. F. Davison. Dr. Burkhardt was previously on the staff of the Veterinary College, Dublin, and Trinity College, Dublin. He will make an investigation upon the heart of the horse and will also participate in work upon infertility in the mare.

Mr. Davison was until recently Sterility Officer attached to the Midland Agricultural College. He will conduct researches into equine infertility. The headquarters of both senior Fellows will be at Cambridge, but they will have the co-operation of owners of breeding studs and racing stables at Newmarket and elsewhere. Preliminary work will be conducted upon Welsh ponies.

These appointments have been made possible through the efforts of the Bloodstock Industry Committee of the Trust, who have so far raised a sum of £60,000 (some under covenant). Fifteen owners of stallions standing at £98 or over gave one free nomination for 1945, and these were auctioned by Messrs. Tattersall at their autumn sales, when the total of 5,040 guineas was reached. Nominations for 1946, to be sold next July, have already been given by the owners of notable stallions. From this and a scheme for securing donations on a *per capita* of stock owned basis it is hoped to secure an income sufficient to ensure that the task which the Trust has undertaken shall be successfully prosecuted.

* * * * *

Previously fined sums totalling between £400 and £500 for not complying with a magistrate's order to destroy a dog stated to be dangerous, Charles Harold Stuart Parsons, 44, consulting ophthalmic optician, of Riverdale Road, Sheffield, was fined a further £165 at Sheffield—£1 a day for keeping the dog alive from June 22nd to December 5th last.

* * * * *

Weekly Wisdom

I am second to none in my annoyance with government by impersonal civil servants in distant offices, but the kind of civil servant who actually comes round and knows what he's talking about and wants, not just to collect statistics but to help one to farm decently, he's fine!—Naomi Mitchison in *The Countryman.*

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

* * * * *

INJECTION OF LIVE ABORTION VACCINE

Sir,—To the letter on the above topic by Dr. W. M. Scott in the issue of 6th inst., may I add some items of personal experience acquired through accidental inoculation with strain 19 *Br. abortus.*

In this case, sucking of the puncture and poulticing did not appear to prevent the development of undulant fever, for in spite of such treatments, symptoms of undulant fever, accompanied by a very painful local reaction, were observed by two days after the accident.

Diagnosis by means of the agglutination test, of undulant fever caused by strain 19, may be difficult, as the agglutinins thus developed may not produce a diagnostic reaction when tested with the laboratory strains of *Br. abortus,* although causing agglutination in high titre with *Br. abortus* (strain 19) antigen.

Where strain 19 infection is suspected, it would appear essential for the laboratory testing a sample of human blood to employ specific (strain 19) antigen before issuing a negative report.

Yours faithfully,

7 Clunie Street, D. R. Macrae.
Banff.
January 11th, 1945.

* * * * *

ARTIFICIAL INSEMINATION

Sir,—The contribution to your columns of December 30th, by my friend Major Kirk, recalls my first attempt at artificial insemination.

The subject was a valuable bay trotting mare belonging to Mr. Jack Andrews, of Ashton-under-Lyne, which had resisted all natural attempts to get her in foal. Some kind friend had informed Andrews that I might solve the difficulty and I agreed to attempt artificial insemination. I had a piece of tubing attached to a bulb syringe which were sterilised and raised to body temperature ready to collect the seminal fluid after she had been served. That was successfully accomplished and the fluid then introduced into the uterus. The result was eminently satisfactory. That happened in 1895, if my memory serves me, and the following year I heard that she bred another foal without the aid of artificial insemination.

I chanced to be visiting a medical friend of mine in Manchester when I heard of the operation having been successful, and had barely completed the story when he upbraided me for not telling him of it early—"It would have been worth £500 to me if it had been a success in the case of the wife of one of my rich clients!"

I believe that statistics show that over 29,000 children were born in U.S.A. in 1942 as a result of artificial insemination, and the numbers have been increasing over a period of years. I regret that I have not the exact figures available.

In conclusion, Sir, I may mention that in about 1897-98, I believe, a successful artificial insemination occurred after the seminal fluid had been brought from, or sent to (I forget which), U.S.A., which I think was a pretty good effort for those days.

Yours faithfully,

The Willows Bungalow, Reg. F. Wall.
Maidenhead Road, Windsor.
January 16th, 1945.

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VETERINARY SURGEON'S TITLE

Sir,—I have been disappointed to find no mention in your last two issues of Mr. Hughes Ellis's suggestion that veterinary surgeons adopt the title "Doctor" as is done in other countries.

This would undoubtedly raise the status of the profession in the public eye and would be an immediate and ready means for the layman to distinguish the qualified from the unqualified.

A doctor's degree in Veterinary Medicine would appear to be unnecessary as the term is a wide one and holders of diplomas in human medicine use this title.

Yours faithfully,

Winchelsea House, Clive Holliday-Pott.
Kingston-on-Thames.
January 13th, 1945.

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Sir,—I am somewhat surprised to find that members of the profession desire to adopt the title "Dr.".

By many years of custom and common usage, that title has come to apply in the mind of the British public to a medical practitioner. The term usually implies a wealth of respect to an honourable and learned profession and frequently a great affection for and confidence in a particular member of it.

Workers in many arts and sciences may be granted a Doctorate of a University, but even so the term "doctor" applied to them seems a misnomer to the general public.

Whilst having a very great respect for our sister profession I have no desire to ape their customs nor trespass upon their preserves.

In country districts the term "Mr." is used in some vague and indefinable and yet positive manner as a title for the veterinary surgeon and implies just as much respect to him and his profession as does the title "Dr." to the medical practitioner.

The way to improve our status in the public eye is by genuine individual and collective endeavour for the public good and not by adopting titles to which we have no claim.

Yours faithfully,

49, Cambridge Street, L. Guy Anderson.
Aylesbury, Bucks.
January 17th, 1945.